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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,478	03/01/2004	Shoupu Chen	86570SLP	9531

70523 7590 07/09/2008

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EXAMINER	
PARK, EDWARD	
ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
07/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,478	CHEN ET AL.	
	Examiner	Art Unit	
	EDWARD PARK	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is responsive to applicant's amendment and remarks received on 4/10/08. Claims 1-17 are currently pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 1** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim calls for the element, "examining in vivo images captured in a finite temporal range around the alarming signaling time." The phrase, "finite temporal range around the alarm signaling time", deems the claim indefinite. Is the process repeated to insure that the method is accurate by choosing different in vivo images? Is the in vivo images captured and processed deleted afterward executing a automatic notification? How are images captured or extracted before the alarm signaling time if the process is real time? Is there a buffer? The scope of protection is unclear, and the claim is therefore indefinite. The examiner will interpret the claim limitation as reasonably broad as possible. The interpretation of the claim limitation is that there will be no weight given to the limitation mentioned above and the limitation will be

considered inherent since the alarm signal is triggered after the examination of in vivo images before the signaling time. Correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoi et al. (US 6,951,536 B2) with Alfano et al (US 6,240,312 B1), and further in view of Nemeth et al. (WO 01/99703 A2).

Regarding **claims 1 and 11 (as best understood)**, Yokoi teaches an automatic notification and remote access method for diagnosing real-time in vivo images from a location remote from one or more in vivo video camera systems, comprising the steps of:

a) capturing multiple sets of real-time in vivo images ("set of images captured inside the body"; Yokoi: col. 19, line 63-64) using the one or more in vivo video camera systems ("an image pickup device and an illumination device"; Yokoi: figure 4; col. 4, lines 65-67); and

g) routing the automatic notification including information on in vivo camera travel distance in GI tract to remote recipient(s) (see col. 14, lines 57-67; col. 15, lines 1-5; data obtained are temporarily accumulated in memory located inside the capsule and then transmitted by the transmission-receiving circuit 30 and antenna 31 to a receiver such as the external unit 5

located outside the body by comparing the data obtained by the receiver with the standard values, and to determine the capsule advancing position or state);

Yokoi does not teach forming an examination bundlette, image processing in vivo images in the examination bundlette in a generalized image color space for robust disease detection; using image processing algorithms to automatically detect one or more abnormalities in one or more of the in vivo images in the generalized image color space; signaling an alarm, receiving an automatic notification, executing one or more diagnosing tasks and applying image processing algorithms to an image portion of the examination bundlette.

Alfano teaches image processing in vivo images in the examination bundlette in a generalized image color space for robust disease detection and applying image processing algorithms to an image portion of the examination bundlette (see figure 1; col. 6, lines 21-35; spectroscopic imaging system incorporated into device and is connected to CCD image system to improve the sensitivity of the disease diagnosis); and using image processing algorithms to automatically detect one or more abnormalities in one or more of the in vivo images in the generalized image color space (see figure 1; col. 6, lines 21-35; processing and image analysis to diagnosis of disease areas). Examiner notes that the element, "for robust disease detection", implies intended use and will not be given weight in regards to the claim limitations of claim 1. Furthermore, "robust disease detection", differs from detection of abnormalities since disease is a malignant/unwanted medical condition while an abnormality in the context of the claim is a condition that is not normal.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi reference to image process/processing algorithms to the examination

bundlette as suggested by Alfano, in order "to detect and/or treat diseased and/or abnormal biological materials, such as cells and/or tissues inside a patient's body" (see col. 2, lines 8-11) by "improv[ing] the sensitivity of the disease diagnosis" (Alfano: col. 6, lines 21-35).

Nemeth, in the same field of "monitoring medical data" (Nemeth: pg. 1) teaches:

b) forming an in vivo video camera system examination bundlette of a patient that includes the real-time ("real time"; Nemeth: pg. 9, line 20) captured in vivo images for each of the one or more in vivo video camera systems ("medical data relating to physiological or biological status of a patient includes all data relating to the physical condition and composition of the patient"; Nemeth: figure 1, numeral 10; pg. 14, lines 19-21). Images fall under the category of medical data since it is well known in the art that data transcribed in the form of medical images are essential for examination purposes.

e) signaling an alarm provided that the one or more abnormalities in the examination bundlette have been detected ("analyze the medical data and provide the third party with an alert if the medical data meets the established conditions for an alert"; Nemeth: figure 2, numeral 58; pg. 32, lines 17-18);

f) receiving an automatic notification via one or more unscheduled alarming messages from one or more randomly located in vivo video camera systems ("store the medical data and other related information for review by third party" Nemeth: figure 2, numeral 64); and

h) executing one or more diagnosing tasks corresponding to the automatic notification by examining in vivo images captured in a finite temporal range around the alarming signaling time ("third party may instruct the patient to take certain remedial measures"; Nemeth: figure 2, numeral 70; pg. 27, lines 30-32; pg. 28, lines 1-16).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi with Alfano combination as mentioned above to utilize forming an in vivo video camera system examination bundlette as suggested by Nemeth, in order to further enhance the treatment of a patient by allowing all data to be accessible at once by any party.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi with Alfano combination to automatically detect one or more abnormalities in the examination bundlette based on predetermined criteria for the patient as suggested by Nemeth, in order "analyze and respond to the medical data in a timely matter" (Nemeth: pg. 8, lines 11) and to reduce human errors in manual detection.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi with Alfano combination to signal, receive, and route an alarm/message, and to execute one or more diagnosing tasks as suggested by Nemeth, in order to allow "the third party to quickly review the medical data and other related information, to provide instructions for any necessary remedial action" (Nemeth: pg. 33, lines 3-5) and to effectively treat the patient's illness or ailment. Examiner notes that the finite temporal range is inherent since the alarm is signaled when the inspection of the in vivo images produce or warrant a condition that needs attention and therefore an alarm is issued.

Regarding **claim 2**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the unscheduled alarming messages correspond to a detection ("conducting examination"; Yokoi: col. 2, lines 5-7) of an abnormality found in the patient's GI tract ("inside of somatic cavities"; Yokoi: figure 1, numeral 16A, B; col. 2, lines 5-7).

Regarding **claim 3**, the Yokoi, Alfano, with Nemeth combination teaches the elements disclosed in claim 1. The Yokoi, Alfano, with Nemeth combination as mentioned above in claim 1, does not teach where in the automatic notification includes patient metadata describing the patient's medical history and location. Nemeth further teaches where in the automatic notification includes patient metadata describing the patient's medical history and location ("position of the patient .... underlying medical data"; Nemeth: pg. 10, lines 5-15). It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi, Alfano, with Nemeth combination to include patient metadata describing the patient's medical history and location as suggested by Nemeth, in order to have all related patient information bound together to effectively treat the patient's illness or ailment.

Regarding **claim 4**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the one or more randomly located in vivo video camera systems are located in different geographic regions of a country and/or a continent ("patient is in a remote location far from a hospital"; Yokoi: fig. 36A, B; col. 25, lines 20-31).

Regarding **claim 5**, the Yokoi, Alfano, with Nemeth combination teaches the elements disclosed in claim 1. The combination does not teach providing a communication channel and providing the remote recipient(s) with the automatic notification of a detected GI tract abnormality. Nemeth further teaches wherein the step of routing the automatic notification to the remote recipient(s), further comprises the steps of:

providing a communication channel to the remote recipient(s) ("medical data is transmitted via the internet such that the third party can view the medical data"; Nemeth: pg. 10, lines 24-25); and

providing the remote recipient(s) with the automatic notification of a detected GI tract abnormality ("transmit an alert if it is determined that the medical data meets the conditions established for the generation of an alert"; Nemeth: pg. 10, lines 29-31).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi, Alfano, with Nemeth combination to provide a communication channel and automatic notification as taught by Nemeth, in order to allow "the third party to quickly review the medical data and other related information, to provide instructions for any necessary remedial action" (Nemeth: pg. 33, lines 3-5) and to effectively treat the patient's illness or ailment.

Regarding **claim 6**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the unscheduled alarming messages operate within a two-way messaging system ("cellular phones, internet"; Yokoi: fig. 36A, numeral 182; col. 25, lines 38-39).

Regarding **claim 7**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the remote recipient receives messages by utilizing a two-way messaging system ("cellular phones, internet"; Yokoi: fig. 36A, numeral 182; col. 25, lines 38-39).

Regarding **claim 8**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the remote access is accomplished by a communications network ("transmission may be conducted with other communications means such as cellular phone, internet"; Yokoi: fig. 36A, numeral 182; col. 25, lines 9-13, 35-39) for retrieving and/or sending the patient's in vivo images from multiple locations either inside or outside ("remote site"; Yokoi: col. 25, lines 9-13, 35-39) of a clinical environment ("remote location far from a hospital"; Yokoi: col. 25, lines 9-13, 35-39).

Regarding **claim 9**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the step of forming the examination bundlette, includes the steps of:

forming an image packet of the captured in vivo images of the patient ("image data … accumulated in memory"; Yokoi: col. 22, lines 11-13);

forming patient metadata ("memory storing the patient's data"; Yokoi: col. 22, lines 21); and

combining the image packet and the patient metadata into the examination bundlette ("when the image data are transmitted, the patient's data stored in the memory may be transmitted as header information of the image data"; Yokoi: col. 22, lines 20-25).

Regarding **claim 10**, the rejection of claim 1 is incorporated and Yokoi further discloses wherein the step of processing the examination bundlette, includes the steps of:

separating the in vivo images from the examination bundlette ("identification code may be recognized by the external unit and separated from the image data" Yokoi: col. 20, lines 43-44);

and processing the in vivo images according to selected image processing methods ("control circuit … conducts a comparative processing such as pattern matching of the captured image and the disease image read out from the disease database …"; Yokoi: figure 18; col. 19, lines 29-35).

6. **Claims 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoi et al. (US 6,951,536 B2), Alfano et al (US 6,240,312 B1), with Nemeth et al. (WO 01/99703 A2), and further in view of Kenet et al (US 5,836,872).

Regarding **claims 12-15**, Yokoi, Alfano, with Nemeth combination discloses all elements as mentioned above in claim 1. The Yokoi, Alfano, with Nemeth combination does not teach detecting one or more abnormalities based on predetermined image criteria for the patient; detecting one or more abnormalities based on predetermine image criteria for the patient employing image data transformation and detection; transforming image data for an image portion of the examination bundlette to a generalized color space; detecting one or more abnormalities by applying thresholding; and applying lower/higher thresholding or higher thresholding in the generalized image color space.

Kenet teaches detecting one or more abnormalities based on predetermined image criteria for the patient (Kenet: col. 16, lines 36-67; col. 17, lines 1-15); detecting one or more abnormalities based on predetermine image criteria for the patient employing image data transformation and detection (Kenet: col. 16, lines 36-67; col. 17, lines 1-15); transforming image data for an image portion of the examination bundlette to a generalized color space (Kenet: col. 16, lines 36-67; col. 17, lines 1-15); detecting one or more abnormalities by applying thresholding (Kenet: col. 16, lines 36-67; col. 17, lines 1-15); and applying lower and higher thresholding or higher thresholding in the generalized image color space (Kenet: col. 16, lines 36-67; col. 17, lines 1-15).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi, Alfano, with Nemeth combination to utilize image transformation and to detect abnormalities through thresholding as suggested by Kenet, in order to enhance the reliability, precision of the system in regards to detection of abnormalities.

7. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoi et al. (US 6,951,536 B2) in view of Nemeth et al. (WO 01/99703 A2).

Regarding **claim 16**, Yokoi discloses a method comprising:

capturing a real-time in vivo images ("set of images captured inside the body"; Yokoi: col. 19, line 63-64); and relaying information on in vivo camera travel distance in GI tract (see col. 14, lines 57-67; col. 15, lines 1-5; data obtained are temporarily accumulated in memory located inside the capsule and then transmitted by the transmission-receiving circuit 30 and antenna 31 to a receiver such as the external unit 5 located outside the body by comparing the data obtained by the receiver with the standard values, and to determine the capsule advancing position or state).

Yokoi does not disclose automatically detecting an abnormality in a generalized image color space in real-time in the in vivo images; and signaling an alarm with information on in vivo camera travel distance in GI tract in real-time when the abnormality is detected.

Nemeth, in the same field of "monitoring medical data" (Nemeth: pg. 1) teaches:

automatically detecting an abnormality in a generalized image color space in real-time in the in vivo images ("analyze the medical data to determine if any of the conditions under which an alert is to be provided"; Nemeth: figure 2, numeral 58; pg. 22, lines 20-28);

signaling an alarm in real-time when the abnormality is detected ("analyze the medical data and provide the third party with an alert if the medical data meets the established conditions for an alert"; "provide alerts, warnings and other information to third party will be informed, preferably in real time or near real time, of instances which the medical data meet certain predetermined conditions that merit the immediate attention of the third party; Nemeth: figure 2,

numeral 58; pg. 32, lines 17-18; pg. 7, lines 24-28). Examiner notes that generalized image color space does not further specify the in vivo image since the image is taken and contains color whether it is bi-tonal or RGB, etc.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi reference to automatically detect an abnormality and signal an alarm as suggested by Nemeth, in order "analyze and respond to the medical data in a timely matter" (Nemeth: pg. 8, lines 11) and to reduce human errors in manual detection.

8. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoi et al. (US 6,951,536 B2) with Nemeth et al. (WO 01/99703 A2), and further in view of Li et al (US 6,470,092 B1).

Yokoi discloses a method, comprising:

capturing a real-time in vivo images ("set of images captured inside the body"; Yokoi: col. 19, line 63-64); and relaying information on in vivo camera travel distance in GI tract (see col. 14, lines 57-67; col. 15, lines 1-5; data obtained are temporarily accumulated in memory located inside the capsule and then transmitted by the transmission-receiving circuit 30 and antenna 31 to a receiver such as the external unit 5 located outside the body by comparing the data obtained by the receiver with the standard values, and to determine the capsule advancing position or state).

Yokoi does not disclose automatically detecting an abnormality in a generalized image color space in real-time in the in vivo images by comparing the images to abnormality feature templates; and signaling an alarm in real-time when the abnormality is detected.

Nemeth, in the same field of "monitoring medical data" (Nemeth: pg. 1) teaches:

automatically detecting an abnormality in a generalized image color space in real-time in the in vivo images ("analyze the medical data to determine if any of the conditions under which an alert is to be provided"; Nemeth: figure 2, numeral 58; pg. 22, lines 20-28);

and signaling an alarm in real-time when the abnormality is detected ("analyze the medical data and provide the third party with an alert if the medical data meets the established conditions for an alert"; "provide alerts, warnings and other information to third party will be informed, preferably in real time or near real time, of instances which the medical data meet certain predetermined conditions that merit the immediate attention of the third party; Nemeth: figure 2, numeral 58; pg. 32, lines 17-18; pg. 7, lines 24-28). Examiner notes that generalized image color space does not further specify the in vivo image since the image is taken and contains color whether it is bi-tonal or RGB, etc.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi reference to automatically detect an abnormality and signal an alarm as suggested by Nemeth, in order "analyze and respond to the medical data in a timely matter" (Nemeth: pg. 8, lines 11) and to reduce human errors in manual detection.

Li, in the same field of medical abnormality detection in images (see col. 1, lines 15-18) teaches detecting an abnormality by comparing the image to abnormality feature templates (see col. 2, lines 3-28 obtaining templates and comparing the candidate abnormality with the templates).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the Yokoi with Nemeth combination to compare an image to abnormality

feature templates as suggested by Li, to determine a "cross-correlation value" to determine whether an abnormality is malignant or benign (col. 2, lines 3-28).

Response to Arguments

9. Applicant's arguments filed 4/10/08, in regards to **claim 1**, have been fully considered but they are not persuasive. Applicant argues that Alfano reference does not disclose how disease is diagnosed (see pg. 6, fourth paragraph). This argument is not considered persuasive since the claim 1 does not go into any detail on the steps of how disease is diagnosed in the first place. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., disease is diagnosed) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 1 refers to detecting one or more abnormalities, but does not specify diagnosing diseases which is completely different from detecting abnormalities. Furthermore, Applicant argues that the reference does not disclose the technique of using image processing algorithms to automatically detect diseases (see pg. 6, fourth paragraph). This argument is not considered persuasive since the claim limitations are met by the Alfano reference by processing and image analysis to a diagnosis of an malignant disease, tumor, etc (see Alfano: col. 6, lines 22-34). The section mentioned meets the limitation of the claim since a spectroscopic imaging system that is incorporated into the device is utilized for processing and image analysis for diagnostic purposes. Furthermore, the applicant does not specify what kind of algorithm but rather generally states that an image processing algorithm is

used to detect an abnormalities within the claim language. The examiner notes that the broadest, reasonable interpretation is taken from the claim limitation and is met by the Alfano reference.

Applicant argues that Nemeth does not teach automatically detecting diseases in generalized R and G image color space (see pg. 7, first paragraph). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., automatically detecting diseases in generalized R and G image color space) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that Nemeth does not disclose examining in vivo images capture in a finite temporal range around the alarm signaling time (see pg. 7, second paragraph). This argument is not considered persuasive since finite temporal range is inherent since the alarm is signaled when the inspection of the in vivo images produce or warrant a condition that needs attention and therefore an alarm is issued. Furthermore, this limitation produces a 35 U.S.C. 112 issue that is addressed above in the rejection.

Applicant argues that none of the Yokoi, Alfano, or Nemeth references disclose automatically detecting one or more abnormalities in the generalized R and G image color space (see pg. 7, third paragraph). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., automatically detecting one or more abnormalities in the generalized R and G image color space) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van*

Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant argues that the above mentioned references do not disclose routing the automatic notification including information on in vivo camera travel distance in GI tract to remote recipient(s); and executing one or more diagnosing tasks corresponding to the automatic notification by examining in vivo images capture in a finite temporal range around the alarming signaling time (see pg. 7, third paragraph). This argument is not considered persuasive since the claim limitations are newly presented amendments that are met by the combination of Yokoi, Alfano, and Nemeth and can be seen above in the rejection and argument section of claim 1.

Applicant argues that the Nemeth reference does not disclose detecting abnormalities in one or more of the in vivo images in the examination bundlette or analyzing images (see pg. 7, paragraph 4). This argument is not considered persuasive since it is the Alfano reference that discloses the limitation instead of the Nemeth reference and can be seen above in the rejection of claim 1.

Applicant further argues that the examiner is utilizing hindsight without specifically referring to the claim element (see pg. 7, paragraph 4). In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). This argument is not considered

persuasive since applicant does not specify where exactly hindsight is utilized and therefore the argument is not taken into consideration.

Furthermore, applicant argues that the Nemeth with Alfano tends to teach away from claim 1 by being directed at improving sensitivity (see pg. 7, paragraph 4). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason/motivation for applying image processing algorithms is further clarified in the motivation of combining Nemeth with Alfano in the rejection section of claim 1.

Applicant argues that **claims 2-15** are patentable due to the dependency on claim 1 (see pg. 7, last paragraph; pg. 8, first paragraph). This argument is not considered persuasive since the rejection of claim 1 stands and the argument and rejection can be seen above for claim 1.

Regarding **claim 11**, applicant argues that Alfano process the images using spectroscopic hardware instead of applying image processing algorithms (see pg. 7, last paragraph). This argument is not considered persuasive since the hardware of Alfano meets the limitations of applying image processing algorithms by allowing the spectroscopic imaging system to improve the sensitivity of the disease diagnosis for processing and image analysis (see Alfano: col. 6, lines 2-34). The Alfano hardware invokes that imaging processing algorithms are present or

executed since the hardware is controlled by the software that controls the physical tangible device which is in the Alfano case the spectroscopic imaging system.

Applicant argues that **claims 16 and 17** do not disclose automatically detecting an abnormality in a generalized image color space in real-time in the in vivo images and signaling an alarm with information in vivo camera travel distance in GI tract in real-time when the abnormality is detected (see pg. 8, third paragraph). This argument is not considered persuasive since the claim limitations newly added and are met by the combination of references mentioned above and can be seen in there rejection of claim 16 and 17. Applicant further argues that Li does not add these features/claim limitations mentioned above in argument section of claim 16 and 17 (see pg. 8, paragraph 3). This argument is irrelevant since Li brings in the concept of comparing images to abnormality feature templates as seen in the rejection of claim 17.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD PARK whose telephone number is (571)270-1576. The examiner can normally be reached on M-F 10:30 - 20:00, (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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